



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## STREET RAILWAY FRANCHISES IN MASSACHUSETTS

---

BY WALTER S. ALLEN,

Secretary of the Special Street Railway Commission of 1897.

---

Although Massachusetts was not the first state in which railways for the transportation of passengers were laid in the streets, yet it was among the earliest, and the great development in recent years, which has taken place, not alone along physical lines but also upon legal and economic lines, has made the conditions in that state of especial interest.

The first street railway was opened in New York in 1852, and in the following year the legislature of Massachusetts granted two street railway charters, one for the establishment of a line between Boston and Roxbury and the other for a line from Boston to Cambridge. This latter company organized at once, and in December, 1854, secured a location in the streets. It then undertook to secure subscriptions to its stock but met with little success, only raising a few thousand dollars in this way. A contractor was however found who was willing to build the road and receive his pay in securities, and on March 26, 1856, the road was opened for travel between Bowdoin Square in Boston and Harvard Square in Cambridge, a distance of about three miles. It is curious to note that this first Massachusetts road was of the type known now as interurban, rather than purely urban in its character. It was but a short time before the other cities lying about Boston—Roxbury and Charlestown and South Boston—secured this form of transportation, although the old established omnibus lines still continued to run. Indeed it was not until early in the eighties that the line of omnibuses which ran to Roxbury was finally given up.

While the Cambridge and Roxbury street railways were to a certain extent interurban in character, and ran for considerable distances over marshes and past long stretches of vacant land, it was plain that in time these lands would all be occupied, and the suburban

districts would be incorporated into the larger city. But in 1859 a railway strictly interurban in its character was built. This connected Boston and Lynn, a distance of about ten miles, and traversed a country which showed no indications of dense settlement, and which even to-day presents long stretches of vacant land. This railway was built along the old turnpike and connected Lynn directly to Boston, also serving a few scattered settlements along the turnpike.

These early street railways required special legislation to enable them to carry on their business, and the laws began speedily to adapt themselves to the conditions. Each railway was incorporated by special act of the legislature, and each charter granted certain privileges in the streets, and authorized the city authorities to impose certain restrictions. It may be well here to note the fact that the control of the streets and highways in Massachusetts rests in the legislature, and that the courts have repeatedly held that when acting on questions concerning these, the aldermen are not acting as municipal representatives but as direct servants of the legislature, which has by statute delegated certain of its powers to them.

These early street railway charters provide that the mayor and aldermen shall determine in what streets the company may lay its tracks, the distance from the sidewalk at which the rails shall be laid, the grade and the gauge; and they shall at all times have power to make such regulations as to the speed of the cars and the mode of use of the tracks as public safety and convenience may require. The company is given power to construct, maintain and use such tracks on the location granted by the municipal authorities. These charters were granted for a term of fifty years. In 1854 amendments were made to the charters granted in 1853, one providing that at any time after the expiration of one year from the opening of the road for use the mayor and aldermen may, by a majority vote, determine that any of the tracks which the board sees fit shall be discontinued, and thereupon the tracks of the company shall forthwith be taken up and removed in conformity with the vote or order of the mayor and aldermen; another that notice shall be given to all abutters before a grant of location is made, and still another that rates of fare within the city of Boston shall not exceed five cents except with the consent of the mayor and aldermen. From this time on the section relating to the revocation of locations was inserted in each new charter granted to a street railway company.

All these charters require that the company shall maintain and keep in repair such portion of the streets and bridges as shall be occupied by its tracks. One charter required a company to keep in repair the whole of the bed of any road in which it might lay tracks, but this was changed in the following year and limited to repairing that part of the road occupied by the tracks of the railway. The act further defines the part of the road to be kept in repair as "the space between the rails, and so much on each side thereof as shall be within the perpendicular let fall from the extreme width of any car or carriage used thereon, being the space from which the public travel is excluded during the passing of said car or carriage."

These charters also provide for the purchase by the municipalities of "all the franchise, property, rights and machinery of the company at any time after the expiration of ten years from the opening of any part of the road, by paying for these rights such a sum as will reimburse to each person who may then be a stockholder therein the par value of his stock, together with a net profit of 10 per cent. per annum from the time of the transfer of said stock to him on the books of the corporation, deducting the dividends received by said stockholder thereon."

It was early recognized that the use of the streets for more than one set of tracks was infeasible, and as early as 1857 a provision was inserted in one charter allowing this road to run over the tracks of another, and in 1863 a general law was passed governing the use of the tracks of one road by another.

By 1864 the spread of these street railways had become so great throughout the commonwealth that an attempt was made to unify the laws, and in that year a general law was passed to govern them. In this general law the feature of a perpetual location, subject to revocation by the local authorities, was retained, and definition of the space in the streets in which the pavement was to be maintained was defined to be the space within the tracks and eighteen inches on either side. In this law the provisions existing in many of the original charters providing for eventual municipal ownership of the roads were eliminated. But this general law was evidently not an entirely satisfactory statute, for in the same year a commission was appointed by authority of the legislature to investigate the whole subject of street railways. This commission made a report to the legislature of 1865, and submitted a bill which failed of becoming a law. Even

at this early date it was recognized that the local authorities had in many cases imposed unjust burdens upon the railways, and that the power to revoke locations might be improperly used, so that the commission recommended that extraordinary conditions must be shown to be based upon good and sufficient reasons; that these reasons must be stated, and must be good in law. It also recommended that there should be an appeal to the courts from an order of revocation issued by local authorities. As the subject of the creation of a board of railroad commissioners was then under discussion this commission recommended that, in the event of its creation, this board should have jurisdiction of street railways as well as of steam railroads, but, as stated, all these recommendations failed to become law.

It was not until 1871 that a Board of Railroad Commissioners was established and given jurisdiction over street railways, and at about the same time the law in relation to them was codified. Under this law the street railways operated until 1898 with but few changes.

The most important of these modifications of the original law was the passage, in 1894, of the so-called "anti-stock-watering laws." These laws, which were made to apply to all of the public service companies, were intended to prevent the issue of stock without adequate payment for the same, and provided that street railway companies must obtain the sanction of the Board of Railroad Commissioners for any new issue of stock or bonds, and that such an issue should be made at a price fixed by the board, but at not less than par. The price fixed was to be determined by the actual market price of existing shares and by other pertinent conditions. The practical working of this law has been different from that intended by its authors. It was difficult for the street railway companies to go before the board and show the exact cost of needed extensions, and request the authorization of stock issues to cover the cost, and the board was naturally reluctant, after being put in the position of guardian of the people's rights, to assume that the cost of contemplated work was correctly stated. Moreover, changes might vary in a marked degree the cost of the work during the progress of construction. The practice, therefore, has grown up of the railways going ahead and completing desired extensions, incurring a floating debt for the work, and then, after completion of the work, going to the board and asking for the authorization of an issue of stocks

or bonds for the payment of the debts so incurred. In many ways this practice has been expensive, and the condition of the money market has often been such that companies have refrained from making improvements which would have been undertaken had there been power in the company to issue new shares in advance of the work. While these laws have undoubtedly been of advantage in preventing the wholesale watering of street railway stock at the hands of promoters, they have been disadvantageous to the conduct of honestly managed enterprises.

The successful introduction of electric traction in 1888, and its rapid spread brought into existence an entirely new set of problems, and by 1897 the law was found to be inadequate in many of its provisions. It was felt that franchises were too freely given in some places, that in others the conditions imposed were too onerous, and that the rapid extension of interurban roads demanded important changes in the law. Among the people a feeling had grown up that the new type of street railway, which was being so rapidly extended through country roads and into small villages, should be compelled in some way to pay taxes in excess of those already fixed by law. On the other hand the railways felt that the right of local boards of aldermen and selectmen to revoke at any time a location in the streets was a menace to their property, and that investors in street railway securities were not sufficiently safe-guarded against hasty action by such boards. The legislature of 1897, therefore, passed a resolution authorizing the governor to appoint a committee of three persons, to be known as the "committee on the relations of street railways to municipalities," to sit during the summer and report to the legislature of 1898 what changes, if any, were desirable in the street railway law, especially as it concerned franchises and taxation. Governor Wolcott appointed as members of this committee Hon. Charles Francis Adams, Hon. William W. Crapo and Hon. Elihu B. Hayes, and they immediately began the work of investigating the conditions as they existed both in Europe and America, and heard the railway companies, the municipalities and those citizens who had plans to offer for any changes in the law.

The condition of the franchise law has already been stated, and attention may be called at this point to the law governing the taxation of street railways as it then existed. Massachusetts had a law in operation governing the taxation of franchises which

had been in force since 1862. This law is applicable to all Massachusetts corporations, whether operating private business or public utilities. In substance its provisions are these, the municipalities assess the value of the tangible property of a corporation located within their boundaries, and the state determines the total value of the capital stock, as shown by sales, or as determined by the tax commissioner from all evidence obtainable. From the total value of the capital stock of the corporation, as determined by the tax commissioner, there is deducted the value of the tangible property of the corporation, as determined by the local assessors, and upon the difference in these values the state levies a tax at a rate equal to the average rate assessed upon property in all the towns and cities of the state. The state after collecting this tax distributes the proceeds among the several cities and towns in proportion to the shares of stock in these corporations held in them, retaining in the state treasury the tax upon shares held outside the state. As the tax is in this way paid directly by the corporations, the shares in Massachusetts corporations are not taxed to the holder living within the state. Evidence was presented to the special committee of 1897 showing the burden which the existence of street railways placed upon the municipalities in regard to the repair of streets, and it was shown that the introduction of heavy electric cars, running at high speeds, had increased this burden. On the part of the street railways it was shown that there was a constantly increasing burden put upon them by the requirements made by the city in regard to paving and repairing streets and caring for snow and ice.

The committee took two radical steps in regard to taxation. Realizing the justice of the claim of the municipalities as to their burdens, they proposed the distribution of the state tax on street railways according to the mileage of track in each town or city, and not upon the shares of stock held in each, and further, it presented a plan for the commutation of the charges for care of the streets, based upon the gross earnings of each company, relieving them of the work on the streets. It was of course not possible to change existing contracts under which the roads were operating, but an attempt was made to secure to the municipalities an individual control of the surface of the streets, the railways commuting their obligations to care for the streets into a money payment.

As regards the tenure of franchises, the existence of perpetual

revocable franchises was seen by the special committee to be an anomaly, but they had worked well under Massachusetts conditions, and in practice but two attempts had been made to revoke franchises. In both these cases public opinion caused the speedy repeal of the revocation order. The committee felt, however, that the interests of the stockholders in street railways ought to be protected against hasty action on the part of municipal authorities, and they recommended giving the roads a right to appeal to the Board of Railroad Commissioners from any order revoking a location which might be made by the local authorities.

There were a number of other changes proposed, mostly of a minor character, the most important being the grant of the right to the Railroad Commissioners to give a location to an interurban road in a town where it had been refused or burdened with unjust conditions by the local authorities. This change was due to the fact that it was found that some of the smaller towns had attempted to "hold up" interurban roads which were obliged to build through their limits in order to connect larger towns, and it was based upon provisions in the law relating to telegraphic companies.

This act, submitted to the legislature of 1898 by the special committee, became a law substantially as presented, but to a large measure was only applicable to the railways outside of Boston. In Boston a statute granting rights to the Boston Elevated Railroad, passed in 1897, provided that, so far as taxation was concerned, no change should be made in that act for a term of twenty-five years. As there are many peculiar features in the Boston street railway situation it will be considered by itself.

In 1904 all the statutes of Massachusetts were revised, and the street railway law as then existing was brought into one chapter, embodying all of the laws passed up to that time. Since then two topics have come to the front—the carriage of freight by street railways and the granting to them of the right of eminent domain. For several years different street railways had secured from the legislature special acts giving them the privilege of carrying express matter and certain forms of freight, and although these were in general opposed by the steam railroads, it was always possible to secure their passage. A general act was passed in 1903 governing the carriage of express and freight, but this was modified in 1904. The original act allowed the street railways to act as common carriers with the



consent of the aldermen or selectmen of the towns through which the road passed, but the act of 1904 limited the power to the carriage of such things, and the employment of such methods, as the Railroad Commissioners should approve.

The legislature of 1904 granted to the street railways a right to take private lands with the approval of the aldermen or selectmen and the Railroad Commission, and the legislature of 1905 had before it several special bills granting full powers to street railways to take land for their purposes, but none became a law. A special legislative committee is now considering this question and several other street railway matters, and this committee will report to the legislature of 1906.

During the past few years the physical and economic changes in the street railway situation have progressed even more rapidly than the legal changes, and these deserve careful attention.

From 1856, the date of the opening of the first horse railroad in the streets of Boston, until 1888, the date of the first successful introduction of electric traction, the progress of street railways had been constant and steady, covering all parts of the state, but in these thirty-two years there had been built but 562 miles of track. With the demonstration of the practicability of electric traction the street railway mileage increased at an extraordinary rate, so that by September 30, 1904, there were 2,652 miles of track operated in the State of Massachusetts, and this whole mileage was operated by electric power.

The natural development of the horse railway was urban and suburban, because of the limitation of the area which could be served. There is necessarily a limit to the time which people can devote to being transported from their homes to their work, and this natural limit affects the patronage of any form of transportation. It may be safely assumed that an hour represents the time which can be devoted to getting to and from work, and the speed at which transportation can be handled governs the area which is tributary to any urban centre. With the horse railroad this time covered at the outside a radius of eight miles, and the first effect of the introduction of high speed electric traction was to increase the suburban residence area from a radius of eight miles to one of fifteen miles, so that the tributary area of any given urban centre was practically quadrupled. At the same time the street railway naturally became an interurban means of transportation.

Massachusetts is essentially an urban state, and the urban centres are rarely more than fifteen miles apart, so that it is plain that interurban street railways must intrude upon the field of the steam railroads. It was not long after the practical application of electricity before bold promoters entered this field, and roads designed to enter into competition with the steam railroads were projected and built. The steam railroads affected to be indifferent to this phase of street railway development, and did nothing to meet the growing opposition, allowing this extension to go on without giving it due consideration. It was not long before many of the branch steam railroads found themselves seriously affected by the competition of these interurban electric roads, with their flexible forms of operation, but by this time it was too late to bend them to the advantage of the railroads. A consideration of the probable effect of these roads, and a study of the methods employed in Belgium and Italy, under which small lines of narrow gauge railroads running out from the main trunk lines of the steam railroads to the smaller and more remote villages, would have pointed out the way to make these electric roads tributary to the steam roads instead of competitive, and there might then have been no great street railway systems, such as exist at the present time.

But while the electric interurban railways were making these inroads into steam railroads there were evils growing up in their own field. It was easy to convince anyone that a profitable business would grow of itself in districts where at that time there was no traffic; that the interurban road would make traffic. This sometimes proved to be the case, and the very fact of this proof convinced people that this would always be the case, so that it was easy to secure funds for the promotion of any scheme for an interurban road. As these roads were promoted and began to spread over the state the authorities of the small towns began to feel that they might make demands upon the promoters for all kinds of improvements in return for the right to lay tracks. The widening of existing highways, the laying out of new highways, the grading of roads, the lighting of streets, money payments for the use of the roads, and other concessions, were demanded, and as the promoters of these schemes were anxious to complete roads and sell the stock in them in order to begin new roads, they were ready to agree to all sorts of onerous conditions. It was not difficult to foresee the result; in

order to continue their existence these smaller and weaker roads, the roads which had to create their own traffic and pay dearly for the right to create it, must consolidate. It was necessary for them to join with roads having a solid urban basis for their extensions in order to continue their very existence, in order to continue to operate.

The result of this rapid extension of rural and interurban roads, and the resultant consolidations has been to build up street railway systems covering large areas and to force them to assume the position of active competitors of steam railroads. Long distance cars running frequently have taken the place of cars simply connecting the nearest urban centres, and every year sees the extension of routes of this type.

The financial results of this rapid extension of street railways have not been wholly satisfactory, an era of readjustment, which inevitably follows over-expansion, has set in in Massachusetts. The following extract from the last annual report of the Board of Railroad Commissioners shows the position of the roads very clearly:

"In the early days of the change from horse to electric railway, promotion ran wild with the idea that immense profits were to be realized in the extension of the old and in the construction of new railways as electric roads in any and every direction; that where no business was in sight it would appear under the creative magic of the electric car. The test of this opinion, necessarily a test of years in which novelty disappears, is now practically complete. Experience has shown that with the more expensive roadbed and equipment, the heavier rail and larger cars, there has not been the corresponding and expected development of permanent business. Operating cost, too, in heating cars and in repair and renewal of plant, has proved larger than was expected. With the new accommodation and the nearer approach to railroad conditions has come the increased demand of the public for expenditures in the interest of safety and comfort which had not been counted upon, as for example in construction of double track, installment of signal systems and establishment of waiting rooms. Hurried along by the natural enthusiasm for the new type of railway, with its many most attractive features, capital, sometimes deliberately misled, has been invested in undertakings for which there was not sufficient demand and which are now represented by roads run, not only without return upon the investment, but at an actual loss of capital. In such cases the future promises as possible events: the acceptance of an unsatisfactory service as better than nothing; an increase in fares; or the abandonment of the railway."

The conditions imposed in original grants in relation to concessions and payments, and the establishment of low fares, while readily

accepted by promoters whose only object was the completion of the road, have become burdensome as the novelty has worn off and travel has settled into normal channels, and on this point the official opinion of the Railroad Commissioners is of value. In their last report they consider this question of fares, and give the following clear exposition of this problem:

"Upon some railways fares have been raised, and with encouraging results, but this action is usually unpopular and is often taken at the risk of lessening the volume of business. It is, moreover, at times complicated by agreements made between companies and town officials when locations and privileges in the streets were granted. If, however, this is the remedy, it is better that it be applied than that the public lose the benefits which the railways bring.

"Another incident of the present situation has been the enforcement upon certain systems of a seemingly arbitrary distinction between the long and the short distance ride, to the provocation of the through traveler, who is loth to admit that there is any justification for it. The zone system has never been favored in this State. Instead, there has been adopted the five-cent fare within city and town limits, in some cases between centres of adjoining towns. As new grants of location have been sought, the five-cent fare has been made good for greater and greater distances, frequently through the use of transfer checks. This low fare promotes a better distribution of population in large communities and is conveniently paid and collected, while the company has been enabled to reap a profit in the frequency with which cars have been filled and refilled with persons taking short rides. In one notable and exceptional instance this fare covers five cities which were deemed to be so closely connected as to make practically one continuous community and so to give the company the advantage of continually changing patronage from point to point. The attempt, however, upon interurban lines to maintain these local concessions and at the same time to establish a sort of mileage basis for through travel, with arbitrary fare limits, has naturally led to frequent complaints from those who think they are unjustly denied privileges which are given to others. The companies as well as the traveling public would be benefited by the establishment of a more satisfactory system of fares upon these railways. Much study has been and is being given to the matter, but as yet the problem remains unsolved."

Intimately connected with this question of fares is the question of taxation. At the present time it is popular to take the position that all public service companies should make some payment to the municipalities in the form of franchise taxes, or special taxes of some sort, for the use of the streets. The fact that taxes are a part of operating expenses, and are directly assessed upon the user seems to have been entirely lost sight of. It is popular to say that any

corporations using the streets should pay for the right, just in the same way as it is popular to say that governments, either city or state, can embark in enterprises from which good business judgment holds private capital aloof. Although taxes upon private property are clearly felt to be a burden upon business, taxes on public utilities are considered to be merely a new source of revenue to the municipalities.

Taxes are always a part of operating expenses, and an important part. According to the last report of the Railroad Commissioners the street railways in Massachusetts pay in direct taxes 6.3 per cent. of their gross income, and what they may pay in indirect taxes due to burdens placed upon them by municipalities in the original grants of locations is not easily determined. It is probably well within the fact to say that taxes, direct and indirect, represent 10 per cent. of all the fares collected from passengers, or, in other words, each passenger in Massachusetts who pays a five cent fare pays one-half cent in taxes, which, for those who make the greatest use of street cars—the wage-earners, is a heavy burden.

The social and economic importance of the great expansion of street railways, due to the introduction of electric traction, cannot be overestimated. The rapid extension of these lines into suburban areas has changed the entire course of land values, resulted in the occupation of large areas of land which, without the means of cheap and rapid transportation, brought about by the electric street railway, would have remained vacant for many years to come, and has carried the thrifty class of wage-earners out into the country, with all its advantages, while at the same time preserving to them all the advantages of urban life. The city schools are accessible, and, at the same time, the children have the freedom and advantages of country life. The extension of long interurban lines, with pleasure resorts maintained by the railways, located in attractive places along the route, affords opportunity for long journeys through the country at small expense, and gives a chance for country outings to dwellers in city districts. From June to November these long distance lines are patronized by crowds of city dwellers who get their knowledge of the country surrounding them under the most favorable conditions. Instead of devising new methods to increase the burden of taxation on these means of improving the condition of the people, it ought to be the object of the state to foster the extension of street

railways, and to relieve them of existing burdens rather than to impose new ones.

So far the street railways of Massachusetts have been considered without special attention to the problems involved in the metropolitan district of which Boston is the centre. The municipal area of Boston, with a population of 600,000, cannot be taken by itself when the transportation problem is considered. The true transportation area of Boston is composed of a score of separate municipal areas, with a population in excess of 1,200,000. Its topographical peculiarities are such that the problem involves bringing in, in the morning, the suburban population along the sticks of a fan, and the distribution at night of the same people along the same lines, but in a reverse direction, so that the congestion of street car traffic in the downtown districts probably exceeds that of any city in the country. The problem of street transportation in Boston presents many features of interest, and its historical development, both physically and legally, is worthy of extended study. The first lines leading to the suburbs were those previously mentioned, and their construction dates from the fifties. As the city grew, and its boundaries expanded through the occupation of vacant land, and the annexation of neighboring municipalities, the demand for adequate transportation facilities grew also, and new street railways entered the field. In an urban district, such as Boston and its suburbs, promoters were quick to see the possibilities, and new companies entered the field from time to time. The legislature of Massachusetts and the city council of Boston, being imbued with the feeling—almost universally held at that time—that the more competition there was in street transportation the better off the community would be, freely granted rights in the city streets to these new companies.

This competition led to the absorption and lease of weak lines, and the number of companies was reduced, until in 1865 there were only four street railway companies operating in Boston, each serving a different district. To the north, connecting Charlestown with Boston, and there meeting the Lynn and Boston Street Railway Company, extended the Middlesex Street Railroad; to the west the Union Street Railway Company, the lessee of the Cambridge Street Railroad Company, united Cambridge and Boston; to the south the Metropolitan Street Railroad Company served to connect Boston with Roxbury, and towards the east the South Boston Street Rail-

way Company brought the detached settlement on the peninsula projecting into Dorchester Bay into closer connection with the heart of the city.

These four roads continued their separate existence for about twenty years, during which time other competing roads were built, and in turn absorbed. There was, however, a single exception. The Highland Street Railway Company, originally built as a competitor of the Metropolitan Railroad in the Roxbury district, proved itself capable of independent existence, as the large amount of land made by filling in the Back Bay drew a large population into a district lying to the west of the original Metropolitan lines, and poorly served by them. In 1887 legislative sanction was obtained for the absorption of these five companies into the West End Street Railway Company, and for the first time Boston found itself with a single street railway system. The West End Street Railway, originally incorporated for the purpose of developing large areas of unoccupied land in Brighton and Brookline, had at this time built only a short piece of road, but it was simpler to use this company to absorb the rest of the Boston companies than it was to bring about a consolidation of the different companies. For the next ten years this enlarged West End Street Railway Company served Boston and its suburbs, spreading out more and more widely each year.

Of equal importance with the consolidation into one company of these different roads was the equipment of the consolidated road with electric power, begun in 1889 in a small way, almost experimentally. This proved itself so practicable that in a few years the whole system, excepting only a few minor lines, was equipped for electricity. The first experiments in 1889 were made with overhead wires, and also with a conduit system, but the former was so much cheaper to construct and presented so many advantages in operation that the conduit system was abandoned, and the only construction to-day in use in the state is the overhead conductor.

By 1890 the congestion of street cars in the heart of Boston had become so great that it was necessary to devise some plan for relieving the overcrowded streets of the central district. After careful study by a very able commission an elaborate report was made in 1892, which included a thorough investigation of all that had been done both in the United States and Europe, and acting on that report the legislature of that and the next two years passed acts authorizing

the city of Boston to construct a subway, immediately under portions of Tremont and Boylston streets, into which all the cars traversing those streets were to be turned, and the tracks on the surface were to be removed.

In accordance with these acts the city of Boston undertook the work and built the subway, with a total length of about one and two-thirds miles under the streets of the central part of the city, at a cost of about \$4,250,000. Upon its completion it was leased to the West End Street Railway Company for twenty years, for an annual rental sufficient to pay the interest on the bonds issued to build it and to provide a sinking fund which would extinguish the principal in forty years.

In 1896 the demand from the suburban districts for more rapid transit caused the incorporation of the Boston Elevated Railway Company, which immediately planned an elevated structure about seven miles in length, located in the streets. This connects Roxbury with Charlestown and passes across the centre of the city proper and through the subway. The Boston Elevated Railway Company then secured the West End Street Railway by means of a lease, and united under a single management the transportation of passengers within the settled districts of Boston and its immediate suburbs by means of electrically propelled cars on the surface of the streets, under the streets and above the streets. This consolidation and development stage seemed for a while to meet the situation, but only for a short time. Much as the congestion had been relieved by the subway in Tremont street and the elevated road, still congestion of traffic occurred and new subways were planned. At the present time a subway paralleling the present Tremont Street Subway is under construction in Washington street, a tunnel connecting Boston with the island of East Boston has been completed, and plans are under consideration for a subway combined with an elevated structure leading to Cambridge and following the line of the first horse railroad from Bowdoin Square to Harvard Square. In a growing city transportation problems must follow the growth of the city.

The legislation governing this growth has followed its physical development, and its modern development dates from the incorporation of the West End Street Railway Company in 1887. Through this organization the city of Boston acquired for the first time a



comprehensive street railway system. Then as expansion became necessary the Boston Elevated Railway came to the front, and by means of legislative sanction of a broad plan the future was provided for. The important legislative act in the history of street transportation in Boston is the latest act governing the Boston Elevated Railway Company, chapter 500 of the acts of the year 1897. Some of the features of this act will be of interest. First and foremost is the question of fares, always a vital point of interest to the public at large. The act provides that the fare upon the road shall not exceed five cents, and that this shall not be reduced for a term of twenty-five years, provided, however, that it may be reduced by the Board of Railroad Commissioners on condition that the reduced fare shall not reduce the earnings of the company to a point where the return on the cash capital of the company shall be less than 8 per cent., after taking out all charges including a reasonable amount for depreciation. It may be noted here that the statutes give the Board of Railroad Commissioners the power to order an appraisal of the property of any street railway company, for the purpose of determining the value of its property, and ascertaining whether there has been any impairment of its capital, and that this has always been done prior to the authorization of any increase of capital or bonds, or determination of the proper charge for fares.

This statute of 1897 governing the Boston Elevated Company goes further and provides a special method for taxing this property. The statute, drawn in the form of a contract, provides that for a term of twenty-five years no other taxes than those then in force at that time shall be laid upon the railway, but that as compensation for the privileges granted, and for the use and occupation of the streets, the company shall pay a tax of  $\frac{7}{8}$  of 1 per cent. on its gross income, provided the dividend on its shares does not exceed 6 per cent., but if the dividend should exceed 6 per cent. then there shall be an additional amount paid in taxes equal to the excess above 6 per cent. The tax thus assessed on gross earnings is to be distributed among the cities and towns in which the railway operates, on the basis of the mileage of tracks located in each municipality. The question of transfers, a very important one, in a system of the character of the Boston Company, is to be left in the hands of the Railroad Commissioners. The same act provides for a tunnel to connect Boston proper with the island upon which East Boston is situated.

This tunnel, which has now been completed, was, by the terms of the statute, to be built at the expense of the city of Boston, but was to be leased to the Elevated Company for a rental of  $\frac{3}{8}$  of 1 per cent. on the gross earnings of the entire system. There was to be charged also a toll of one cent for each passenger using the tunnel. The tolls and the rental were expected to be sufficient to meet the interest and sinking fund charges on the cost of the tunnel, and it was provided in the act that if these combined payments should be in excess of these charges the Railroad Commissioners might reduce the tolls. Up to the present time no agreement has been reached between the railway company and the city of Cambridge in regard to a subway and elevated structure for that city, although negotiations looking towards the accomplishment of that object are pending.

The question of the future relation of the electric street railways to the steam railroads is forging rapidly to the front and is apparently to be the subject of legislative action in the immediate future.

The railroads at the start missed the opportunity to make the electric railways their feeders. They opposed their development at every turn, and forced these interurban roads to make alliances among themselves, which, with the inevitable consolidation brought about by natural conditions, resulted in the building up of street railway systems which in certain sections, rivalled the steam railroads in extent. Such systems, by means of their flexible form of operation and low rates of fare, soon made inroads into the suburban and interurban traffic of the steam roads, and caused them to take active measures towards meeting this competition.

As a concrete example of the results of this competition let us take the passenger traffic in and out of Boston on the steam railroads. In 1893 over 56,500,000 passengers were carried in and out of Boston. This traffic began to diminish in the following year, and in 1898 it fell to less than 49,000,000, a loss of about 13 per cent., from this time on it grew again until in 1904 it reached a figure of 56,400,000, or practically the traffic of 1893. To put this in another way—the entire natural increase in population and in the use of means of transportation went for a period of eleven years to the street railways.

The steam railroads in Massachusetts have at last awakened to the importance to them of the question of the electric railway. This may be due to a broader point of view, or it may have been forced

upon them by the larger powers granted the street railways in respect of freight. There is no question but what the legislation of the past few years has been distinctly favorable to the street railways as against the steam railroads. The grants of location in the public highways, the right to carry freight, the right to create a practically continuous grade crossing at the very time when the steam railroads were being forced to do away with these, all constituted an advantage. At the same time physical advantages contributed to the success of the street railway as a competitor of the steam railroad. Improved engineering, resulting in decreased cost of electric current, more permanent construction, reducing maintenance charges, and, above all things, the flexible form of operation by which single cars dispatched as often as the development of the traffic demanded, were substituted for the train of cars and the locomotive dispatched as many times a day as the railroad felt the cost of such trains would justify, all tended to give the electric railways great advantages.

This condition of affairs, which has been taking shape for the last fifteen years, has at last stirred the steam railroads. The completion and successful operation of an electric railway connecting Boston with Worcester, a distance of forty-four miles, and the prospect of a similar road between Boston and Providence, R. I., the same distance, seem to have awakened the steam railroads to the fact that their profitable passenger traffic was deserting them and incited them to efforts to counteract the drift.

One of the most hotly debated measures presented to the legislature of 1905 was one allowing the absorption of electric street railways by steam railroads, and while no conclusion was reached, and the question was referred to the special committee sitting during the recess, it is inevitable that there must be some form of consolidation of these two forms of passenger transportation. The financial results of the operation of many of the interurban street railways show that something must be done in the interest of the investors in these securities, and the inroads made upon the traffic of the steam railroads show the need of action on their part.

Having lost the opportunity of directing the development of the electric railways throughout the rural districts in such a way as to make them feeders of the steam railroads, the future policy of the steam roads must be in the direction of undoing the evils now existing.

The public fears the result of the consolidation of the two rival systems of passenger transportation, and there is a strong opposition to the desired legislation, but the logic of the situation and the economics of transportation must inevitably force the consolidation. It may be done under the authority of the statutes or it may be done outside of the statutes under the pressure of economic facts, but it is inevitable. The public may feel that their rights are not sufficiently safeguarded by the Railroad Commissioners, and the steam railroads and the electric street railways may feel that they are oppressed by the statutes as interpreted by the board, but so far as Massachusetts is concerned there is no evidence to show that the drift of legislation and its administration has not been equitable.

The whole trend of legislation in Massachusetts has been to give the public and the street railways a fair show and to leave disputed questions to the judgment of an expert tribunal—the Board of Railroad Commissioners—but even with this qualification the great growth of this method of street transportation has raised questions ahead of legislation, and there are many problems still to be solved. Taken all in all, there is little question but what the conditions as they exist to-day in Massachusetts come nearer to an equitable solution of the problems involved than they do in other states. There is no doubt a tendency to overtax the street railway companies at the expense of the people they serve, but this arises from the misconception of the incidence of such taxes. The principle of a perpetual revocable franchise seems absurd but in practice it works exceedingly well. It holds the companies to good service under penalty of revocation, and yet by the safeguards placed around the revocation it insures the investor reasonable security for his money. The working of this apparently illogical form of franchise is in practice far better than the popular one of limited franchises. Nothing is more disturbing to the systematic, logical development of a system of street transportation than a limited franchise. It is poor business policy to put money into a street transportation plant which, at the end of a short term of years, may be rendered useless by a refusal to renew the grants of location. Good business policy demands that a company possessing a franchise for a street railway system which expires in a short time shall put aside enough from its income to reimburse its stockholders for the money they have ventured in this plan to supply the public with facilities for transportation, so

that they may be secured against loss at the expiration of the franchise term. This enforced setting aside of a fund for the payment to the stockholders of the money they have invested hampers the company in many ways. It prevents extensions during the last years of the life of the franchise; causes during the entire life of the franchise the question to be raised whether any given improvement will yield enough to provide a sinking fund and a fair return on the money expended, and forbids any improvement which cannot meet these requirements. The problem of street transportation in the United States is of vital importance, and Massachusetts, early in the field, has tried out many of the questions involved. It would be folly to claim that Massachusetts has solved all the complex problems presented by the rapid urban growth of the past twenty years, and the still more rapid growth of suburban localities, but there is no question but that in practice Massachusetts methods have proven themselves sufficiently flexible to meet the rapid growth of urban and interurban street railway conditions as shown in a state distinctly urban in character.

The question of the municipal operation of street railways has not been seriously considered in Massachusetts, although the special committee of 1897 favored municipal ownership of tracks and private operation, but this has never taken practical shape either in legislation or in actual practice. It is a large problem to consider—is a municipality justified in spending the money of the taxpayers on a speculative investment, for, considered from the point of the actual results of street railway operation, such an investment must be considered speculative. The Massachusetts plan of protecting the public and the stockholders by rigid supervision by a competent tribunal certainly deserves consideration in all parts of the country, and its actual operation seems to prove its efficiency in that state at least.